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SIGMA XI QUARTERLY

Vol. VIII

JUNE, 1920

No. 2



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VOL. V

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Prof. E. C. Case
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SIGMA XI QUARTERLY

EDITORIAL COMMITTEE

Floyd Karker Richtmyer Edwin Emery Slosson
Henry Baldwin Ward

VOL. VIII

JUNE, 1920

No. 2

EDITORIALS

Especial attention is called to the minutes of the Executive Committee meeting which are printed in this issue. The items discussed include certain questions of great general importance on which chapters and members should be informed. Several minor amendments to the Constitution were proposed by various chapters; some were acted upon favorably and their publication herein constitutes the official notice to all chapters required to make them eligible for consideration at the next Convention. The other proposals are published for general consideration before final action is taken.

During May three new chapters of Sigma Xi were installed: that at the Mayo Foundation by Ex-president Stieglitz and the secretary, that at the University of North Carolina by President McClung and that at the University of North Dakota by Dean L. W. Jones, a member of the Executive Committee. A full account of these installations will be printed in the next issue of the *QUARTERLY*. These are the first chapters to be added to the roll of Sigma Xi since 1915. They mark the resumption of activity after the war and one may justly expect that they indicate also the inception of a new period of growth in the Society which will add to its influence and opportunities.

Sigma Xi is growing, more rapidly indeed than the man realizes who does not keep tab on the yearly increase in membership. Evidently it must gain in breadth and strength as well as in members if it is not to become merely a huge inert organization, valuable for

recording the past achievements of those it elects but lacking in power to assist them to greater accomplishments or to develop the spirit of research that its founders set as the supreme ideal. But Sigma Xi needs also coordinating influences that may bring together and unite its entire membership in their attainment of the research ideal. Its purpose involves association as well as investigation and eager effort, for are not its members "Companions in Zealous Research?" A group of separated chapters unrelated in plan and independent in action can never achieve the full ideal set forth in this motto and every chapter is obligated by its pledges to seek to realize in the fullest possible degree that contact with other parts of the Society which will give it knowledge of the general plan and active interest in it. This alone can develop unity and cooperation in the organization as a whole and make it a vital force in directing and encouraging the prosecution of research in the active chapters.

But there is another and even larger part of the Society that has been neglected, if not entirely forgotten, in the development of Sigma Xi thus far. To President Stieglitz the Society is indebted for the emphasis laid on the lost opportunity afforded by a host of inactive members, loyal to the organization and its ideals, and only needing an adequate appeal to make them virile factors in its work. Somewhat the same idea has come entirely independently to one of the inactive members himself and has led to the writing of an article published in this issue. The suggestions it contains are most timely and deserve the careful consideration of every active member. Up to this time no effort has been made to bring into relations that might be mutually helpful those companions whose zealous research has carried them beyond the limits of academic walls. To organize the inactive members and to keep them in touch with the active chapters will cost time and effort as well as some money also. The advantages have been pointed out within the circle of the active membership; the appeal comes now from without. It is the power of the active membership to determine what course shall be followed, but at least every active member is obligated to give the subject serious consideration. Is it not possible to emphasize companionship without in any way neglecting zeal in research? What can Sigma Xi do to make itself a constant inspiration in the fields where it has so many inactive members?

AFTER SIGMA XI—THEN WHAT?

BY EUGENE VAN CLEEF

The world never needed the services of scientific men and the scientific ideal more than it does today. It needs scientific men for the accomplishment of systematic organization and constructive development of our industries, our arts, our music, and all the other elements that affect modern progress. The world needs an ideal lest we become too material and only mercenary in our motives. While this is the day of the specialist, there is danger ahead if he fails to keep before him an ever widening horizon of thought and endeavor. Men may become so absorbed by their own little world that they will develop along lines of individualism rather than of co-operation for the good of all. Sigma Xi is the only scientific organization which does not exclude any branch of science. As such, it offers the members great possibilities for constructive work and for the making of a world better to live in for the coming generation.

In his presidential address (June 15, 1887) Professor H. S. Williams of Cornell, first President of Cornell Chapter of Sigma Xi, one of the founders of Sigma Xi, expressed forcibly and beautifully the worth-while ideals for which Sigma Xi stands. He said in part,* "The spirit of scholarship demands modern learning. The modern scholar seeks knowledge as a means toward the vigorous expression of his manhood, a knowledge of those seething elements in the midst of which he lives, and of which he is one. . . . He must be a specialist. In his specialty he must think for himself, plan for himself, act for himself. Here he must rest on no one, but be himself a support for others. He must be a constant student, constantly advancing, and, making stepping stones of his dead self, rise to higher things. . . . He who adapts himself best to modern issues, who serves best the present ages, has been, will always be the successful man."

Professor Williams, one can readily appreciate, possessed vision and a keen appreciation of the ideals of life as well as the spirit of practical accomplishment—qualities not too common even among the leaders of this day.

The motto of the society of Sigma Xi is officially recorded as "Companions in Zealous Research." For its interpretation we refer to Professor Williams' statement cited above, of the hopes and

*QUARTER CENTURY RECORD AND HISTORY of Sigma Xi—by H. B. Ward.

ideals of the first members of Sigma Xi which should also represent the goal sought by the present day members. The spirit of research has always been fostered, and of course has constituted the key-stone of its development. Election to membership in Sigma Xi has been based upon a demonstrated ability of students of science to accomplish successful research. Some institutions recognize this in the undergraduate years while other institutions recognize it only in graduate years and elect accordingly. It should be noted that election is based largely upon a forecast—there is no assurance that a student elected to Sigma Xi will do honor to his fellow members although as matters have worked out, there have been few instances where the judgments of the departmental heads have caused them to regret their action.

Sigma Xi has not been ideally impractical. It has fostered a sympathetic bond between the theoretical or academic consideration of scientific problems and practical research to solve some of the problems immediately associated with public welfare. We need only refer to the splendid work of the California Chapter in connection with the Bubonic Plague. It published a volume on the subject of the eradication of bubonic plague which has earned international notice. There are thousands of instances where individual members of Sigma Xi have accomplished practical scientific work of the highest order. Sigma Xi sees both sides of the shield, the ideal and the practical, and hence possesses the basic elements for the building of a great and beneficial association.

An organization is no stronger than its weakest link. Sigma Xi unfortunately possesses a weak link, in the opinion of the writer, but it is a link which it is possible to forge into one of its strongest. The weak link is the change in character of membership when one passes from the "active" membership within the walls of the university to the "inactive" membership when he leaves the university. In its practical workings, this arrangement results in the inactive members becoming essentially non-members. They lose interest in the organization to which they were elected and are reminded of it only as they may carry a key which stands as the emblem of the society. The *SIGMA XI QUARTERLY*, in which this article appears, can serve as a medium between the active and inactive membership. It aims to stimulate interest in the welfare of Sigma Xi. Unfortunately the struggle for existence has been severe, and

today it is published at less than cost. This condition ought not to obtain. The present subscription rate of 50 cents per year, of course, could hardly be expected to support the QUARTERLY. This could well be doubled and the number of subscriptions increased several times. It is inconceivable that inactive members should be indifferent. That there is a real interest in Sigma Xi has been demonstrated in at least one community.

In Duluth, Minn., a city of approximately 100,000 people, were brought together about seven years ago the members of Sigma Xi present there. They represented different lines of business and the professions. Meetings have been held once a month at which members dine and some one of the group presents a paper on a phase of the field of work in which he is engaged at the time. The wives of the married members and lady friends of unmarried members are invited to the meetings. Every one of the meetings has proved an inspiration and despite the fact that the membership was sadly depleted by the war and at the present time is only five in number, the Sigma Xi Club still exists. Meetings are now not held so frequently, but nevertheless the organization is intact and is prospering. If this can be done in a city of 100,000 people, it can be accomplished in many other centers throughout the country. A number of the members of the Duluth Club of Sigma Xi had never known of the QUARTERLY and also were not aware of the presence in Duluth of other members of Sigma Xi who came from various universities throughout the country. A local organization of the type such as organized there stimulated greater interest in Sigma Xi and it is the writer's opinion each one of the members of that organization would be very glad to subscribe to the QUARTERLY if they knew that there would result a greater spirit of cooperation and good fellowship among the inactive members throughout the country. The SIGMA XI QUARTERLY may well serve as the tie that binds the inactive membership and the active membership; on the one hand it may bring good tidings of the active members to the inactive members and on the other what is going on among those who have left the universities and are out in the wide, wide world may be communicated to those still in training.

In order to stimulate Sigma Xi still further, it is suggested that in cities where chapters are located there be greater cooperation between the active chapter and the inactive members. There might

be an arrangement whereby the inactive members would meet with the active once a year, if not twice a year, for example—a mid-winter and a mid-summer meeting, at which there would be exchanges of ideas. The result would be mutually beneficial. Members in the business world would be stimulated by the ideals set forth by those still in the academic field, and those in the academic work preparing for their future, would get inspiration from contact with the inactive members, now successful business and professional men.

There is no limit to the possibilities of Sigma Xi. Let it not be a dormant organization but rather one wholly alert to the world about.

NOTE

April 15, 1920.

I was interested in your account of the "First Convention" in the *QUARTERLY*. The mystery of the Kansas delegates is explained by the fact that the Kansas Chapter sent formal credentials to Comstock and Merritt of the Alpha Chapter to represent Kansas at the Convention, in accordance with a provision of the Constitution of the Society.

JAMES McMAHON

MINUTES OF EXECUTIVE COMMITTEE MEETING

The annual meeting of the Executive Committee of the Society of Sigma Xi was held in the offices of the National Research Council, Washington, D. C., on April 24, 1920. There were present Messrs. Clarence E. McClung, Carl H Eigenmann, Edward Ellery, F. E. Kester, George B. Pegram, F. K. Richtmyer and Henry B. Ward.

The Secretary was authorized to purchase a typewriter for the use of the Society.

Representation on the Council of the American Association was discussed and it was voted that the President appoint such representatives as may be called for to serve until the Convention shall meet and determine the method of appointment and tenure of office. It was further voted that the Executive Committee recommend to the Convention that the appointment of representatives on the Council of the American Association for the Advancement of Science be made by the Executive Committee and that rotation in office be provided for. This action was taken with a view to securing as representatives those who will and can participate regularly in the work.

A communication from the manufacturing jewelers was read advising that at the expiration of the present contract the price for the associate membership emblem would be increased. The original committee in charge of the matter, namely Messrs. F. K. Richtmyer and Henry B. Ward, was empowered to make a new contract at the expiration of the present one.

A communication was read from the Syracuse Chapter submitting the following proposed amendment to the Constitution:

"It is recommended that Article VI, Insignia, be amended as follows:

Section 1a. In the sentence reading 'On the lower line shall be the owner's name, together with the numeral of the class in which he graduated and the name of such college where graduation took place.' Omit everything after, 'On the lower line shall be the owner's name.'

The communication called attention to the confusion arising from the present form of the requirement. If the section in the Constitution is implicitly observed some members will be called upon to print on the key the name of a college in which no chapter of Sigma

Sigma Xi exists or which at the time of their graduation did not have a chapter of the society. At the close of the discussion it was voted that the recommendation of the Syracuse Chapter be transmitted to the Convention with the recommendation of the Executive Committee that it be adopted.

In the communication from the Syracuse Chapter it was also proposed to omit in its entirety the last sentence of Article VI, Section 1a, reading as follows: "Provided that the continued use of the older design of the badge shall be optional with the several chapters."

During the discussion it appeared that this matter was really in line with other items being considered at present by a special committee appointed by the Pittsburgh Convention, and it was accordingly voted that the matter be referred to the Committee on Uniformity of Badges.

Correspondence from the Missouri Chapter relative to the use of the associate membership badge showed the existence of a distinct misunderstanding with reference to the following statement in the Constitution:

Article VI, Section 1, (b) "The use and granting of such badge shall be optional with the several chapters."

This clause had been interpreted to indicate that the regular badge of the Society might be utilized by a given chapter for its associate members; and inasmuch as the Missouri Chapter was opposed to such use of the regular emblem by associate members they had not provided for the use of any associate membership badge. However, the action taken by the Pittsburgh Convention prohibited distinctly the use of the regular badge for associate members. As a result of the discussion the Missouri Chapter voted unanimously to adopt the new badge and to encourage its use, both as an appropriate insignia and as a means of avoiding confusion. It was on motion voted that the Executive Committee recommend to the Convention to strike out the sentence, "The use and granting of such badge shall be optional with the several chapters."

The question of using emblems set with jewels was brought up for discussion, and it appeared from the records of manufacturing jewelers that very few keys of that type were called for. The evidence also showed that there was opposition to the utilization of the Society emblem as an article of jewelry, and the Executive Com-

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mittee voted to recommend that the sentence, "The monogram may be jewelled, enameled, or embossed as desired," in Article VI, Section 1, be removed; and that this recommendation be presented to the Convention for approval.

The Committee on Uniformity of Regular Membership Badges, consisting of Messrs. McClung and Richtmyer, which was appointed in 1917 and which made a report of progress to the Pittsburgh Convention, presented further data on the question and called attention to the fact that some objection had been raised to any plan which involved the handling of all badges by a single firm, since certain chapters preferred not to take the business out of the hands of local jewelers. Attention was directed to a report of the Secretary of Phi Beta Kappa which indicated that that organization had settled upon the plan of having a single authorized jeweler and had found the plan most successful. It appeared further that at present there was no way of keeping an accurate check upon badges distributed. Accordingly the special committee was requested to carry the matter further and sound the various chapters as to their willingness to cooperate in the plan of having an official jeweler.

With regard to the Committee on Sigma Xi Fellowships, it was reported that C. H Eigenmann who was appointed chairman at the St. Louis Convention, had found it impossible to carry the work. It was the general opinion that the importance of this project called for prompt and effective action, and it was voted that the President of the Society be empowered to appoint a chairman and to take such further action as would result in getting the committee started on its work.

The Syracuse Chapter suggested an amendment to Article III, Section 10, with reference to non-payment of dues. Attention was called to the fact that the question came up originally at the Columbus Convention in 1915 when the Minnesota Chapter proposed the following amendment.

"Active members of any chapter who are in arrears for dues for two years or more may, after due notification, be dropped from active membership by vote of the chapter; and the names of members so dropped shall be published in the SIGMA XI QUARTERLY."

This amendment was modified by the New York Convention of 1916 and adopted in the form in which it now stands; viz.

"Any member in arrears for one year shall be duly notified of this fact by the secretary of the chapter, and in event of failure to respond within

six weeks may be suspended from membership in the Society. On payment of arrearage he may be reinstated by vote of the chapter. If such reinstatement is not effected in one year his name shall be deleted from the rolls of the Society."

The Syracuse Chapter is inclined to question the advisability of the present regulation, and the discussion brought up the matter of the wording of Article III on membership. As a result it was voted that the chairman be authorized to appoint a small committee, as a sub-committee of the Executive Committee, to present to the members of the Executive Committee through correspondence a re-statement or revision of Article III on membership; and that this proposed committee cooperate with the Committee on Fellowships to the end that the whole matter of membership and duties to the Society be readjusted. Messrs. Richtmyer and Ellery were subsequently appointed members of this committee.

In reply to the question raised by the Syracuse Chapter it was voted that the matter be referred to the committee provided to revise Article III in the Constitution, and that the Syracuse Chapter be informed accordingly.

The following inquiry with reference to honorary membership was made by the Chapter:

"Has it been the policy of the society to elect into honorary membership only those men who have never been active members of the society? Or, is it possible to elect an active member of the society into honorary membership, if he has been an outstanding figure in scientific work?"

Attention was called to the fact that the Society had at the Atlanta Convention (QUARTERLY 2:3) voted adversely to the plan of creating a higher grade of membership, and it appeared in the case presented by the Chapter that since the person was already a member, no change in his status was practicable.

The Colorado Chapter raised the following question:

"The University of Colorado Chapter now elects associate members and is desirous of transferring an associate member to the grade of active member. The person for whom we wish to make this transfer is not now connected with any educational institution. We have been unable to determine whether or not he is eligible for transfer. It is our opinion that associate membership is for those who show promise in research and that provision should be made for transferring such a person to active membership as soon as the requirements for active membership are fulfilled, whether or not the person would be eligible for consideration had he not already been elected to associate membership. I will appreciate receiving information concerning this matter."

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The Secretary had replied as follows:

"As I understand the condition, and as it has also been commented on in various discussions concerning this matter, the election of an individual as an associate member does not in any way modify his consideration for another type of membership later; in other words associate members may be elected to full membership under precisely the same stipulations that exist for others.

"This does not in one sense answer your question as to whether this individual is eligible for transfer, and I may say that if I understand your statement he would not be since he is not now connected with any educational institution and is supposedly not an alumnus of five years' standing."

After discussion it was voted that the Secretary's reply be endorsed by the Executive Committee.

The Executive Committee discussed various propositions for securing the cooperation of chapters in a plan to elect undergraduates to associate membership only. It appeared from the records furnished by the Seeretary that many chapters have already taken this action, thus voluntarily placing such a limit on their own elections. It was decided that the Executive Committee formulate and send a general letter to the chapters regarding the plan.

The St. Louis Convention referred to the Executive Committee the question of formulating an amendment to the Constitution which should provide means for placing chapters at institutions devoted to pure research. Since the Convention had suggested that the views of the various chapters be secured on this matter in order to assist the Executive Committee in formulating the plan in detail, a letter was sent out in March to the various chapter secretaries, requesting them to secure and forward the views of their chapter. Extracts from the replies received were read and it seemed to be the consensus of opinion that the plan of granting charters to such institutions would be desirable under proper limitations. After discussion it was voted that the Executive Committee advises the placing of chapters in such research institutions as possess the same unrestricted rights of publication that exist in educational institutions, provided that no institution should be considered unless it shows that its permanency is reasonably assured by private endowment or state support, and recommends that Article II, Section 1 of the Constitution be amended to read as follows (new portion in italics) :

"A Chapter may be established at any educational institution in which scientific research work is cultivated and promoted, *or at such*

research institutions as possess the same unrestricted rights of publication that exist in educational institutions, provided that no institution shall be considered unless its permanency is shown to be reasonably assured by private endowment or state support."

The question of printing copies of petitions for granting of charters had been referred to the Executive Committee by the Convention. After discussion of the case it was voted that petitioning bodies be requested to put the petition in printed form and that one hundred copies of each printed petition be requested for such distribution as the Executive Committee may in each case decide upon.

The St. Louis Convention requested the Executive Committee to investigate the question of Sigma Xi Clubs and report upon the desirability of such organizations. The Secretary submitted a report showing the number, location and character of such organizations and indicating that one of those recently started was taking preliminary steps towards securing a charter to give the club the full privileges of an active chapter. The discussion brought out the fact that such clubs might naturally be formed in places where no chapter could properly be looked for and where, consequently, no other opportunity to enjoy the privileges of the organization could be secured except through the maintenance of a Sigma Xi Club. It appeared also that in those educational institutions where the granting of a chapter might at first seem doubtful such a club would naturally perform an important function in showing whether the spirit of research was actively and continuously manifested in the institution. Furthermore, by the growth and development of such a group the justification for granting a charter might be thoroughly demonstrated, or on the other hand, by its failure to succeed the wisdom of the step come to appear very doubtful. After this discussion it was voted that the Executive Committee is in sympathy with the organization into clubs of Sigma Xi members, in towns, institutions, or centers of scientific work, believing that they may discharge an important function in disseminating the spirit of investigation and emphasizing the research ideals of the Society. It was further voted that the Executive Committee recommend to the Convention that representatives from such clubs as are duly registered with the Society be given a seat and a voice in the Convention, but no vote.

The question next discussed was that concerning the best type of organization for Sigma Xi work in such institutions as have

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separate portions so distinctly isolated geographically that it has seemed difficult for them to operate under a single charter. The question was discussed at great length and was found to involve so many difficulties and to affect existing relations and historic conditions so radically that the Committee was unable to reach a unanimous agreement on the best policy. Since, however, the Convention had requested the Committee to formulate the most desirable type of organization, it was voted that in pursuance of the mandate of the Convention the Committee take this matter under advisement, that it be discussed more in detail at the semi-annual meeting next spring for definite report one year from this coming Convention; and that the Executive Committee recommend meanwhile the formation of Sigma Xi Clubs and a further attempt to work out a plan of organization practicable to handle the situation in that way rather than by the establishment of separate chapters.

The question of foreign chapters was taken up and various reports showed that interest was already awakened not only on this continent, but even in England, Norway and Australia. It was the sense of the Committee that full encouragement be given to any efforts that might be made in such countries with a view to establishing there chapters of the Society, and it was further voted that the Secretary be authorized to distribute copies of the QUARTER CENTURY RECORD to the libraries of such institutions in foreign countries as may show evident active interest in the Sigma Xi Society, in order that a definite idea of the origin, history and ideals of the organization be presented to the institution.

THE BASIS FOR THE ELECTION OF MEMBERS

The quotation below taken from the by-laws of the Cornell chapter of Sigma Xi treats so clearly and effectively some much discussed questions of the Society as a whole that they have been reprinted here for the benefit of other chapters.

Many members have emphasized in correspondence and in personal discussion the ever present danger of emphasizing numerical averages above real ability in scientific investigation. Too many members and chapter officers confess that they do not know why Mr. X was elected except that a good department or some first class member of the faculty recommended him.

APPENDICES TO BY-LAWS OF THE ALPHA CHAPTER

II

"1. That hereafter each nomination shall be accompanied by a statement of the nature of the work upon which the nomination is based."

"2. That, in the opinion of the committee, there is danger of too great emphasis being laid upon the numerical standing of candidates as compared with the ability for research, (see below) which has always been the criterion for membership."

"3. It is further recommended that these resolutions be printed and sent to the members at the time of asking for nominations."

(Recommendations adopted May 26, 1906.)

"Ability in scientific research should ordinarily involve (1) skill and initiative in devising suitable methods or apparatus for use in making observations or in securing data; (2) skill in arranging and interpreting data and in formulating generalizations based on them; (3) the logical investigation of a scientific question or group of questions resulting in a substantial addition to the existing body of knowledge."

(Definition of Research adopted March 31, 1918.)

IV

"In the interpretation of the phrase 'marked excellence' in Art. III, Sec. 7 of the Constitution relative to the election of associate members, emphasis shall be laid on the candidate's originality and promise of ability in scientific investigation rather than on scholarship alone."

(Adopted at meeting of the Chapter, April 30, 1917.)

CHAPTER REPORTS SYRACUSE CHAPTER

1919-1920

During the academic year the Chapter has held seven regular meetings for the discussion of scientific papers and the conduct of its business, also one public meeting. The scientific programs were as follows:

October 10. Wm. H. Metzler, J. J. Nassau, J. L. Jones, E. D. Roe, Jr., reported upon researches in mathematics. Wm. M. Smallwood, Some Present Day Problems of the Nervous System.

November 14. Ross A. Baker, Aurous Gold, C. R. McCrosky, The Oxidizing Action of Potassium Dichromate. Louis J. Gillespie, Sourness of Soils.

December 12. R. A. Porter, Potential Measurements in a Wehnelt Tube. C. C. Adams, The Roosevelt Wild Life Forest Experiment Station.

February 13. L. E. Wise, Photographic Sensitizing Dyes.

March 5. L. H. Pennington, Recent Investigations Upon the Spread of the White Pine Blister Rust. Harry N. Eaton, The Oriskany Sandstone and its Fauna. E. F. McCarthy, Natural Forest Succession in the Adirondacks.

April 16. W. A. Groat, Human Blood Groups. D. E. Minnich, Some New Organs of Taste in Butterflies. C. W. Easley, Applied Chemical Work.

May 6. Dean Wm. M. Wheeler, Bussey Institution Harvard University, Public lecture upon Worm-lions, Ant-lions, and some 18th Century Entomologists.

May 21. T. S. Yang, J. J. Nassau, J. C. Pomeroy, Otto Gelormini, and Edgar R. Wagner gave five minute reports upon their investigations.

The business discussions of general interest included the following:

The Chapter believes a member might have the right to sustain an inactive relationship, and therefore the Chapter does not care to avail itself of the constitutional provision to expel members for non-payment of dues.

The Chapter voted to urge the supplying of all badges and insignia through one centralized source by the General Society, in the

interest of uniformity in the insignia, in addition to other advantages which would follow such a method of distribution.

There was a discussion of Sigma Xi in relation to research and industrial institutions, especially in reference to the necessity for continued control of the Society by Chapters in educational institutions.

NEW MEMBERS ELECTED FEBRUARY, 1920

FACULTY

LEON ABEL CONGDON

Assistant Professor of Chemistry

Methods for calculating water and detecting added water in canned tomatoes. *Jour. Indust. and Engin. Chem.*, 3, no. 10, 1911. Methods for detecting gelatinizing agents in food. *Jour. Indust. and Engin. Chem.*, 7, no. 7, 1915.

CHARLES WILSON EASLEY

Professor of Chemistry

A substitute for forceps and triangle in dessicators. *Jour. Amer. Chem. Soc.* Atomic weight of mercury. *Jour. Amer. Chem. Soc.* Partial pressure of binary mixtures. *Jour. Amer. Chem. Soc.*

HARRY NELSON EATON

Associate Professor of Geology

The geology of South Mountain. *Jour. Geol.* Some subordinate ridges of Pennsylvania. *Jour. Geol.* Micropigmatite at Chapel Hill, N. C. *Jour. E. Mitchell Scientific Society.*

OTTO GELORMINI

Instructor in Chemistry

At present investigating Butge benzene and its derivatives.

MABEL REYNOLDS HUNTER

Instructor in Botany

Investigation—Studies on the physiological constants of *Scolopendrum*.

DWIGHT ELMER MINNICH

Instructor in Zoology

The photic reactions of the honey bee. *Jour. Exp. Zool.*, 29, no. 3, 1919. The relation of phototropism to swarming in the honey bee (in press).

WALDEN EVERMONT MUNS, A.B., M.D., M.S.

Instructor in Hygiene and Sanitation, Medical College

Blood pressure and graphic vasomotor changes in the periphery during ether anesthesia. *Ann. of Surg.*, Dec. 1916. The effects of ether anesthesia and of visceral trauma as shown by vasomotor and blood pressure changes. Oct. 1917. A rapid method for determination of pneumococcus types (with O. W. H. Mitchell). *Jour. Med. Research*, Nov. 1917.

(Doctor Muns was elected as member of faculty of Syracuse University Medical College, but on account of war not initiated until now. At present on staff and faculty of Post Graduate Medical College, New York.)

JOHN CALVIN POMEROY

Assistant Professor of Physics

The supposed excess of negative electricity produced by spraying. *Phys. Rev.*, December, 1908. The charges on thermions at atmospheric pressure. *Philosophical Magazine*, Dec., 1911.

EDGAR RICHARD WAGNER

Instructor in Chemistry

Investigations under way on organic syntheses, especially in aliphatic and aromatic amino compounds.

RALPH CHILLINGWORTH YOUNG

Instructor in Chemistry

Lubs and Young. Chlorination products of Cymene. *Jour. Ind. and Engin. Chem.*, Dec., 1919.

GRADUATE

NEIL SINCLAIR KOCHER

Chemical Engineering

Investigating the bleaching of cellulose.

GEORGE T. HARGITT, *Secretary*

IOWA CHAPTER

1918-1919

On account of war conditions no meetings were held in the autumn of 1918. During the spring of 1919 three scientific and three business meetings were held as indicated below.

February 26, 1919. Address by the retiring president, Professor Gilbert L. Houser, *The Chief Results of Experimental Embryology*.

March 12, 1919. Professor A. O. Thomas, *A Herpetocrinus from the Silurian of Iowa. Illustrated*. Dr. Frank A. Stromsten, *A Further Note on the Lymphatic System*. Dr. H. L. Dodge, *A New Type of Resistance Unit*.

June 4, 1919. Professor C. C. Raiford, *Steric Relations in Acylation of Amino-phenols*. Professor R. P. Baker, *Asymptotic Forms in Probability*.

Business meetings were held for election of officers, initiation of new members and for hearing reports from the National Organization.

The following new members were elected during the year:

GRADUATES OF FIVE YEARS' STANDING

WALTER GLENN KERBY

Chemistry

Research Rubber Chemist.

GRADUATE STUDENTS

ARTHUR H. DEWEY

Geology

The Pleistocene History of Lee County, Iowa.

ANNA EVELYN ENSIGN	<i>Botany</i>
Rosa pratincola Say, Proc. Iowa Acad. Sci., 1919.	
CARL IMMANUEL ERICKSON	<i>Psychology</i>
Problem in the Psychology of Public Speaking.	
HENRY MAGNUS HALVERSON	<i>Psychology</i>
Localization of Sound.	
HARRY MATLOCK HINES, B.Sc., M.Sc.	<i>Medicine</i>
Determination of Creatine in Muscle II (joint publication), Jour. Biol. Chem., 24:439, 1916. Origin of Creatine II. Joint publication, Jour. Biol. Chem. Vol. 31 p. 549, 1917. Origin of Creatine III (joint publication), Jour. Biol. Chem. 35:75, 1919.	
OSWALD BENJAMIN OVERN	<i>Physics</i>
An Extension of the Number of Lines in the Tungsten X-Ray Spectrum.	
HAZEL MARTHA STANTON	<i>Psychology</i>
Inheritance of Musical Talent.	
BERYL BERNICE TAYLOR, A.B., M.S.	<i>Botany</i>
The morphology of Eupatorium perfoliatum (Thesis). The Vegetation of a Small Lake. Studies in Leaf Development. The Corals of the Niagaran of Iowa (joint investigation).	
HELEN J. WILLIAMS, B.A.	<i>Mathematics</i>
Premiums and Reserves for Insurance Against Total and Permanent Disability, with Tabular Values of Certain Auxilliary Functions to be used in the Computations.	

SENIORS TO ASSOCIATE MEMBERSHIP

RUDOLPH HENRY FREESE	<i>Applied Science</i>
ALVIN HENRY HANAPEL	<i>Applied Science</i>
ERWIN EDWARD NOLL	<i>Applied Science</i>
HAROLD WILBUR SCHELL	<i>Applied Science</i>
GEORGE GILBERT SWARD	<i>Applied Science</i>
EDWARD F. BENHART	<i>Liberal Arts</i>
ANNA HOBET	<i>Liberal Arts</i>
WILHELMINA KOERTH	<i>Liberal Arts</i>
LEWIS BENJAMIN MILLER	<i>Liberal Arts</i>
JOHN HAROLD BUTTS	<i>Medicine</i>
HOMER WILLIAM SCOTT	<i>Medicine</i>
WILLIAM GORDEN WALKER	<i>Medicine</i>

1919-1920

The Iowa Chapter under the presidency of Professor A. C. Trowbridge has had a very successful year, during which it held five meetings. They were as follows:

October 22. Professor Richard P. Baker gave the retiring president's address on the subject Mathematics and Society. Open to the public and well attended.

November 19. Dr. Henry Albert, A New Stain for Diphtheria Bacilli. Professor A. H. Ford, Development of an Electric Pitch Range Audiometer. Mr. C. C. Bunch, Hearing Tests with a Pitch Range Audiometer. Professor L. Charles Raiford, A Migration of Acyl from Nitrogen to Oxygen.

December 10. Business Meeting.

February 25. Annual Lecture and Initiation of New Members. The Annual Lecture was given by Professor W. F. G. Swann, of the University of Minnesota, on the subject, The Electrical Phenomena of the Atmosphere. The lecture was open to the general public and the house was crowded.

March 10. Dr. C. H. Farr, The Problem of the Dynamics of Cell Division. Dr. P. A. Bond, A Method of Determining Solubility up to the Critical Pressure.

May 12. Dr. Bird T. Baldwin, The Physical Growth of the Normal Child. Dr. Clarence F. Hansen, Serial Action. Dean Carl E. Seashore, Demonstration of New Apparatus made for the Department of Psychology.

The new members elected are as follows:

ASSOCIATE MEMBERS

PAUL B. ANDERSON	<i>Psychology</i>
FRED BENDIXEN	<i>Medicine</i>
DWIGHT CHESTER ENSIGN	<i>Biology</i>
ALLIN J. DUNN	<i>Applied Science</i>
RALPH WARREN GELBACH	<i>Chemistry</i>
WALDO SUMNER GLOCK	<i>Geology</i>
RICHARD STEWART HIATT	<i>Medicine</i>
CLARENCE EDWIN LANE	<i>Physics</i>
SARA IMELDA LEWIS	<i>Botany</i>
MAURICE C. MILLER	<i>Applied Science</i>
CHARLES A. MOCKMORE	<i>Applied Science</i>
FRANCES JUNE NELSON	<i>Zoology</i>
MAY MARGARET NISSEN	

FRANK R. PETERSON

ANNA THOMSEN

HAROLD MILTON TRUSSLER

Medicine
Mathematics
Chemistry

ACTIVE MEMBERS

MERRILL J. REAM

A Measurement of Motility; The Tapping Test—thesis for Master's degree.

FRANK A. STROMSTEN, *Secretary**Psychology*

LIST FURNISHED BY THE CORRESPONDING SECRETARIES OF THE CHAPTERS

CHAPTER	PRESIDENT	VICE-PRESIDENT	REC. SECRETARY	COR. SECRETARY	TREASURER
Cornell	G. W. Herrick	S. Simpson	F. G. Switzer	*	O. A. Johnnissen
Rensselaer	A. T. Lincoln	E. W. Coleman	E. M. Clark	*	E. F. Chilman
Union	Ernest J. Berg	Merland King	Mortimer F. Sayre	*	Mortimer F. Sayre
Kansas	B. M. Allen	F. E. Kester	C. M. Steffing	*	C. F. Nelson
Yale	H. L. Seward	C. T. Bishop	C. G. Durfee	*	F. L. Cooper
Minnesota	R. W. Thatcher	W. H. Hunter	Royal N. Chapman	*	C. J. V. Pettibone
Nebraska	W. C. Brenka	H. B. Latimer	Emma N. Anderson	*	M. G. Gaba
Ohio	Clyde Brooks	F. E. Bear	H. C. Sampson	*	W. J. Kosir
Pennsylvania	H. C. Richards	M. J. Babb	Wm. H. Addison	*	J. P. Moore
Iowa	S. S. Colvin	J. F. Collins	James A. Hall	*	G. H. Currier
Stanford	A. C. Trowbridge	A. H. Ford	F. A. Stromsten	*	H. L. Rietz
California	J. P. Smith	L. Abrams	J. C. Clark	*	J. C. Clark
Columbia	W. L. Jepson	G. D. Louderback	L. C. Uren	*	A. C. Alvarez
Chicago	James K. Finch	Walter L. Slusher	Harold A. Tales	*	Harold A. Tales
Michigan	Forest R. Moulton	Rollin D. Stansbury	Charles H. Swift	*	Charles H. Swift
Illinois	John C. Parker	A. F. Shull	P. O. Ottkeberg	*	A. J. Decker
Case	William Trelease	Charles T. Knipf	E. H. Williams	*	B. Smith Hopkins
Indiana	W. R. Veasey	C. D. Hodgemian	R. C. Hummel	*	T. M. Focke
Missouri	J. A. Badertscher	Will Scott	Clyde A. Malott	*	C. E. Edmonson
Colorado	A. Lincoln Hyde	R. H. Baker	W. A. Tarr	*	L. Haseman
Northwestern	R. C. Lewis	R. D. Crawford	W. C. Huntington	*	O. A. Randolph
Syracuse	David R. Curtis	W. G. Waterman	Henry H. Babcock	*	Lonie W. Webb
Wisconsin	E. D. Roe, Jr.	C. C. Adams	Geo. T. Hargett	*	Henry F. A. Meier
Washington State	C. I. Corp	W. J. Mead	E. G. Hastings	*	F. C. Krauskopf
Worcester	E. T. Bell	L. F. Curtis	Nathan Fasten	*	G. S. Wilson
Purdue	A. L. Smith	E. J. Adams	C. B. Hard	*	A. J. Knight
Washington Univ.	E. G. Mahin	C. G. Woodbury	Gilbert A. Young	*	D. D. Ewing
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	Edward L. Dodd	F. A. Perin	Goldie P. Horton	*	H. J. Ettinger

*Offices of Recording and Corresponding Secretary combined according to advice of Convention.
List corrected up to June 1, 1920

OFFICIAL ANNOUNCEMENTS

Associate membership emblems can be secured only by order from the chapter secretary to the national secretary. All orders must be prepaid. Special order blanks sent on request.

SIGMA XI PUBLICATIONS

QUARTER CENTURY RECORD AND HISTORY bound in electric blue cloth. 1886-1911. 7,500 names. 550 pp. \$2.50.

QUARTERLY, Volumes 1-7, 1913-19, four numbers each, unbound, 50 cents per each volume. Forwarded prepaid on receipt of draft or money order in payment of the amount indicated.

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Those ordering a complete set of the QUARTERLY and HISTORY will receive in addition until the supply is exhausted without extra cost a copy of each of the Proceedings of the early Conventions as follows:

Seventh (Philadelphia) Convention. 1904. Pamphlet. 15 pp.

Eighth (New York) Convention. 1906. Pamphlet. 7 pp.

Ninth (Chicago) Convention. 1908. Pamphlet. 14 pp.

Tenth (Baltimore) Convention. 1909. Pamphlet. 6 pp.

Eleventh (Boston) Convention. 1909. Pamphlet. 16 pp.

Twelfth (Minneapolis) Convention. 1910. Pamphlet. 27 pp.

Thirteenth (Washington) Convention. 1911. Pamphlet. 27 pp.

Later conventions are reported in the QUARTERLY.

PRINTED BLANKS

The General Convention has instructed the Secretary to forward to chapters under the following stipulations:

Membership Certificates, stamped with the great seal of the Society. In packages of fifty prepaid, on advance payment of \$2.50 for each package. Please specify carefully whether for regular or associate members.

Index Cards, provided a duplicate set be sent for the general index of the Society maintained in the secretary's office. Gratis.

Statistical Record Blanks, for submitting annual reports giving chapter officers, elections, and other statistical data. Gratis.

MAILING LISTS FOR THE QUARTERLY

Chapter secretaries are requested to furnish a correct list of mailing addresses of active members for the printer. Blank forms. Gratis on demand.

The mailing list should be sent early in September and be valid for the academic year. All changes of address and all other correspondence should be addressed to the Secretary of Sigma Xi, Henry B. Ward, Urbana, Illinois.